Bosch 1125VSRH rotary hammer drill

Technical Demonstration Summary Sheet
PAINT SCALER –BOSCH ROTARY HAMMER DRILL

THE NEED

Decontamination and Decommissioning (D&D) and maintenance operations have a need to quickly and efficiently collect paint samples for laboratory analysis during the characterization process for contaminants such as lead, PCB's, asbestos and radioactive isotopes. Presently, paint samples are collected using handheld tools such as paint scrapers, putty knives, chisels and hammers. This can be a time consuming and physically demanding task for the sample collectors.

THE TECHNOLOGY

The Bosch 1125VSRH is a 24-Volt, battery-operated, ¾" rotary hammer drill. When used with an optional chipping adapter the Bosch rotary hammer drill can be used to perform chipping and chiseling tasks such as paint removal from either concrete or metal surfaces. It is ultra-compact, lightweight and has an ergonomic balanced grip. Since it is battery operated it gives the operator more flexibility during sampling activities. The approximate cost of the unit with accessories (i.e. chipping adapter and bits) is $800.

THE DEMONSTRATION

The Bosch 1125VSRH rotary hammer drill was demonstrated in September of 1999 at the Idaho National Engineering and Environmental Laboratory (INEEL). The demonstration took place at the Test Reactor Area (TRA) in the Engineering Test Reactor (ETR) Delay Tanks and the General Electric Experimental Loop (GEEL) Filter Pit Tunnels. This device was used to collect several different types of samples from lead bricks, concrete and metal surfaces. The types of samples included lead brick shavings, paint, and a tar type sealant.

THE RESULTS

The Bosch rotary hammer drill was easy to use and proved to be very effective in removing a variety of materials for sampling. The Bosch rotary hammer was used to collect lead shavings from lead bricks, tar type sealant from concrete and thick multi-layered paint from concrete. It was easy to control the depth of the sample taken when used on concrete surfaces. Excessive amounts of concrete were not removed during the sample process. This is important since excessive concrete could render the sample useless by adding contaminates into the sample. On average, the Bosch rotary hammer was 2 to 5 times faster than the baseline technologies at removing the material. Because the workers spend less time collecting samples, they also spend less time in contaminated areas, thus decreasing radiological doses.

BENEFITS

The Bosch battery powered rotary hammer technology has several advantages over the existing baseline approach. Cost reductions and accelerated schedules are possible because more samples can be taken in a shorter period of time. Worker exposures associated with paint sample collection in radiation environments are reduced. This technology can accelerate schedule, lower costs, lower radiation exposures and require fewer worker hours.

Baseline Sample Collection – Chisel and Hammer

CONTACTS

- Chelsea Hubbard, Project Manager, U.S. DOE, Idaho Operations Office, (208) 526-0645
- Steve Bossart, U.S. DOE, Federal Energy Technology Center, DDFA (304) 285-4643
- Dick Meservey, Project Manager, INEEL, (208) 526-1834
- Russell Ferguson, Test Engineer, INEEL, (208) 526-5828